

**STEP-BY-STEP**  
**2nd Ed.**

**A GUIDE TO**  
**MOBILITY TECHNIQUES**

**STUDY GUIDE**

**TRANSPORTATION TECHNIQUES**  
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# **INTRODUCTION**

Using public transportation is a way of life for many people, sighted and visually impaired alike. This module focuses on the techniques that travelers who have visual impairments use to safely and efficiently travel in automobiles, buses, and subways. These techniques represent an integrated use of non-cane and long cane skills to perform the complex task of using public transportation. This module is divided into three categories, specifically addressing travel by automobile, city bus, and subway/light rail. In addition to the mobility techniques used in boarding and exiting various modes of transportation, information for the traveler is also provided on how to plan trips, maintain orientation while en route, and negotiate bus stops and subway stations.

## **Automobile Travel**

While it is true that most people who have visual impairments do not drive, there are still a number of skills they must learn with regard to traveling in a car, taxi, or van. While these skills may be taught as an isolated instructional unit, they are often taught as an integral part of community travel instruction taking place in natural environments. Automobile travel skills include methods for safely and efficiently entering and exiting a vehicle, and storing a cane to avoid potential injury to themselves or others. This section covers these methods and also discusses the orientation skills that some travelers who have visual impairments may want to develop to provide directions to a taxi or other driver.

## **City Bus Travel**

City bus travel is arguably the form of public transportation in urban and many rural areas that is most commonly used by people who do not drive. It may be the only, or the most convenient, means of traveling between home and work, school, shopping, or recreation sites. Some cities may have extensive bus service; others may offer only limited routes and schedules. Some cities provide a variety of transportation options including streetcars or light rail, trolleys, and subways in addition to buses. Many of the techniques used in bus travel can be applied to travel on all of these forms of transportation.

Travel on city buses involves a number of complex skills that are usually taught and practiced over a period of time. City bus travel also uses many techniques that are generally provided in earlier instruction. These techniques include long cane and non-cane skills, seating skills, skills for soliciting information, and advanced orientation skills. Furthermore, if it is necessary to travel by foot to or from a bus stop, bus travel may also involve street crossings and route planning.

## **Subway Travel**

Subway systems are generally found in large urban areas. They may simply circle or crisscross a large urban area, or they may have individual lines that serve outlying cities or suburbs. While the term subway implies underground transportation, many subway systems also have trains that travel on raised tracks over city streets, especially as they reach into more outlying areas. While there are dimensions of travel unique to using the subway (e.g., purchasing fare cards from ticket machines, negotiating platforms), travel on subways uses many of the same cane, non-cane, and other skills as does city bus travel.

# **AUTOMOBILE TRAVEL**

# AUTOMOBILE TRAVEL

## Purpose

To enter and exit the front passenger seat of a car, van, or truck; also, to enter the rear seat of a four-door automobile

## Prerequisite Techniques

Cane Placement (See Appendix B)

Lower Hand & Forearm

Seating

Upper Hand & Forearm (Modified)

## Teaching Environments

Begin with a vehicle that is familiar to the traveler. Introduce this skill in a parking lot or driveway where there is plenty of room to get in and out of the vehicle and where there is no potential for other vehicles to be moving nearby. Later lessons can introduce entering and exiting an automobile that is parked near other vehicles.

Practice getting in the front and rear seats of vehicles and stress similarities and differences in procedures.

**Note:** It is generally easier to enter and exit the rear seat of a four-door automobile than of a two-door automobile. It may therefore be helpful to teach this skill first using a four-door automobile and then progress to teaching it using a two-door automobile.

## Skills

### Front Passenger Seat

The following are the standard methods for entering and exiting the front passenger seat of an automobile (or rear seat of a four-door automobile).

#### Entering

- Using her cane and/or the LOWER HAND & FOREARM technique, the traveler locates the vehicle and determines if there is room to open the door without contacting the curb, a pole, or a vehicle parked nearby.
- If necessary, the traveler can identify which direction a vehicle is facing by noting any of the following features:
  - Windshield wipers are located on the front window.
  - The side mirrors are at the front of the vehicle.

- The door handle is located directly in front of the door edge (with the exception of sliding doors on vans, where the handle is located directly behind the door edge).
  - Headlights and tail lights can be distinguished by shape and size.
  - The shape of the front and rear ends are easily distinguished in vans and trucks.
- Holding the cane in her left hand, the traveler locates the door handle with her right hand. The traveler locates the division between the front and rear side windows (or the division between the rear window and rear windshield when entering the back seat) and trails down this division to locate the door handle. In cars, the handle is generally a few inches below the window and a few inches in front of the division. In vans with sliding doors, the handle is located a few inches behind the division (see Figures 1.01a and 1.01b).



**Figure 1.01a**

On most vehicles, the door handle is located immediately in front of the opening edge of the door.



**Figure 1.01b**

On vans with sliding rear doors, the rear door handle is located immediately behind the division between the front and rear doors

3. The traveler opens the door, being careful to not let it hit a vehicle, tree, or other object next to the car. She maintains contact with the door and moves forward one-half of the distance to the door hinge to position herself next to the seat. She then locates the roof edge in one of these ways:
  - Transfer the cane to her right hand and locate the roof edge using the UPPER HAND & FOREARM (Modified) technique with her left arm (see Figure 1.02), or
  - Keep the cane in her left hand and locate the edge of the car roof with the cane grip or shaft, keeping the cane vertical (see Figure 1.03a). She then transfers the cane to her right hand (see Figure 1.03b).
    - Locating the edge of the roof tells the traveler exactly where it is located so that she will not bump her head on it when entering the vehicle.



**Figure 1.02**

The traveler locates the roof edge using the UPPER HAND & FOREARM (Modified) technique. An arrow shows the movement of the traveler's hand to the roof edge.



**Figure 1.03a**

The traveler locates the edge of the car roof with the cane grip or shaft.



**Figure 1.03b**

The traveler then transfers the cane to her right hand.

4. If the vehicle door does not stay open on its own, the traveler can
  - Hold it open using the back of her cane hand while she enters the automobile (see Figure 1.04a), or
  - Hold her cane between her thumb and index finger and hold the door with her remaining three fingers (see Figure 1.04b).



**Figure 1.04a**

The traveler holds the door open using the back of her cane hand.



**Figure 1.04b**

The traveler holds her cane between her thumb and index finger and holds the door open with her remaining three fingers.

5. Maintaining contact with the roof edge, at least until she has ducked her head below it, the traveler reaches in and clears the seat with her left hand to make sure there is nothing on it.
6. The traveler sits down by
  - Stepping into the vehicle with her left foot first
    - She can use her free hand to locate the dashboard or the back of the front seat for balance and as a reference point if she wishes. She can also maintain contact with the roof edge for support as she sits down.
    - If she wishes, the traveler can maintain hand contact with the roof edge so she will not bump her head; she can also use the roof edge for support. The traveler then brings both legs into the vehicle as she turns to face forward.

- This latter method is often preferred by seniors and people who have balance concerns.
7. She then brings her cane into the vehicle. She places the cane tip next to the toes of her right foot and then rests the shaft on her right shoulder.
- Bringing the cane in after she is seated keeps the cane from getting in the way of others already seated in the vehicle.
  - Positioning the cane in this way also keeps it out of the way of the closing door.
8. Holding the cane shaft with her left hand, the traveler closes the door, then lowers her cane to rest between the seat and the closed door (see Figure 1.05a). Although some travelers may choose to rest the cane shaft on their shoulder (see Figure 1.05b), others voice concern that the cane could become a projectile in case of an accident. (Note that a text box is shown in each of these photos. It reads, "Door shown open for demonstration purposes only.")
- The traveler should first verbally indicate her intention to close the door if other people are nearby. This warns others to be certain they are not in a position to be injured by the closing door.



**Figure 1.05a**

The traveler rests her cane between the seat and the closed door. A box in the photo states, "Door shown open for demonstration purposes only."



**Figure 1.05b**

The traveler rests the cane shaft on her shoulder. A box in the photo states, "Door shown open for demonstration purposes only."

9. The traveler buckles her seat belt.

### **Exiting**

1. Holding the cane shaft securely with her left hand, the traveler opens the automobile door slowly and, if necessary, holds the door open to keep it from closing on its own.
  - She may need to verbalize her intention to open the door, then pause to allow other people to move out of the way.
  - She opens the door slowly so she doesn't scratch any vehicle that is nearby and doesn't scratch the automobile door on nearby trees, posts, or other objects.
2. The traveler clears the area immediately outside of the door with her cane.
3. The traveler places either one or both legs outside of the automobile and locates the roof edge with her left hand. She may keep her hand in contact with the roof edge while exiting or, after locating the roof edge, she may place her left hand on the seat for support while rising.
  - If it is necessary to hold the door to keep it from closing, she can hold her cane vertically against the door with her right hand while she locates the roof with her left hand. Keeping her right hand in contact with the top of the door will generally give the traveler the best physical leverage to hold the door open while rising to stand as she exits the vehicle.
  - A traveler with good kinesthetic awareness may not need to keep her hand on the roof edge as a reference point (to avoid bumping her head) while exiting.
4. The traveler exits the vehicle and closes the door, making certain that other people are clear of the closing door.
  - If other people are nearby, the traveler should first verbally indicate her intention to close the door.

## **Back Seat of a Two-Door Automobile**

The following is the standard method of entering and exiting the rear passenger seat of a two-door automobile.

**Note:** Although not absolutely necessary, this method is most easily performed if another person holds the door open while the traveler enters the automobile. Also, the directions below are written assuming the traveler is entering on the passenger side of the vehicle. If she enters on the driver's side, then the terms "left" and "right" should be reversed.

### **Entering**

1. The traveler performs steps 1–4 of the method for entering the front seat of an automobile. She may not need to move forward half of the distance to the door hinge, however, since she will not be sitting in the front seat.
2. The traveler uses either the LOWER HAND & FOREARM or the UPPER HAND & FOREARM (Modified) technique with her free hand to locate the upright portion of the front seat.
3. The traveler moves the seat back (upright portion) of the front seat forward and out of the way. If necessary, she continues to hold onto the roof edge as a reference point so she will not bump her head on the roof when she bends down to move the seat forward.
  - If the seat back does not move forward easily, the traveler may need to trail down the seat back to the release lever that is generally located on the bottom and door side of the seat back. In some older model vehicles, pressing or pulling the lever will cause the entire front seat to move forward.
4. The traveler then clears the rear seat with her free hand to make sure that there is nothing on it.
  - The traveler may choose to simply reach into the vehicle to locate and clear the seat; or, if she finds it more comfortable, she may step into the auto with her left foot (assuming that she is entering on the passenger side), then locate and clear the seat.
5. The traveler sits down and then places her cane tip next to the toes of her right foot. She then either lowers the cane shaft to rest on the seat back next to the side wall of the automobile or rests the cane shaft on her shoulder.
  - Sitting down before bringing her cane into the vehicle helps to ensure that it won't poke someone already in the vehicle.
6. The traveler buckles her seat belt.

### **Exiting**

1. After verifying that any person in the front seat has exited the automobile, the traveler releases the seat back portion of the front seat to move it forward by using the release lever located at the base of the upright portion of the seat. In some

- older vehicles that do not have such levers, the traveler simply pushes the seat forward.
2. The traveler brings her cane out of the vehicle and clears. Holding her cane in the hand nearest the door, the traveler locates the roof edge with her free hand, and steps out of the automobile.
    - She may keep her hand in contact with the roof edge as a reference point (to avoid bumping her head) or place it on the upright portion of the front seat for support while exiting. A traveler with good kinesthetic awareness may not need to keep her hand on the roof edge while exiting.
  3. The traveler closes the door, making certain that other people are clear of it.
    - If other people are present, the traveler should first verbally indicate her intention to close the door. This warns other people to be certain they are not in a position to be injured by the closing door.

## Common Errors and Corrections

### Error:

The traveler holds her cane in the same hand that she is using to open the door.

### Correction:

The traveler should hold the cane in her free hand while she opens the door. This keeps her cane out of the way and prevents her from losing control of it as she opens the door.

### Error:

The traveler fails to clear the seat before sitting down.

### Correction:

Clearing the seat before sitting down enables the traveler to verify that the seat is empty before she sits down.

### Error:

The traveler fails to locate the edge of the roof before she bends down to clear the car seat.

### Correction:

Locating the car roof before bending down to clear the car seat prevents the traveler from hitting her head on the roof as she bends down.

**Error:**

The traveler places her cane in the car before she sits down.

**Correction:**

The traveler should sit down before placing her cane in the car. This makes it easy to store the cane near the car door where it is readily accessible, and it also keeps the cane from getting in the driver's way.

**Error:**

The traveler fails to clear with her cane before stepping out of the car.

**Correction:**

Clearing with her cane before stepping out of the car prevents the traveler from tripping on an object immediately beside the car door.

## Notes for Teachers

When working with a traveler who is unfamiliar with vehicles and their general features, it may be helpful to spend time showing her the parts of a vehicle (e.g., doors, locks, windows, inside and outside mirrors, driver's controls, glove box, handles for doors or windows, seats, engine, trunk, wheels, windshield, rear window), explain their function, and, when appropriate, how to use them (e.g., lock/unlock doors, turn a radio or heater on/off).

Introduce the traveler who is first learning about vehicles to a variety of vehicles (e.g., vans, trucks), and help her discover differences between them in terms of parts, size, layout, purpose, and methods for entering and exiting. Remember, vehicle models vary; thus, specific features (e.g., location of seat belts, seatback releases) may require a separate explanation.

Automobile familiarization can also be incorporated into lessons on travel using varying modes of transportation and modifications of techniques for each (e.g., stepping up to climb in some trucks, side sliding door on vans, etc.). Different types of vehicles include those listed below:

- Two- and four-door cars (various models)
- Pick-up trucks
- City buses
- School buses
- Tour buses
- Vans
- Campers

Equally important to automobile familiarization is the development of skills to maintain orientation en route. The traveler should learn a route frequently traveled by automobiles so she can assist any future drivers who may be unfamiliar with the route.

- The traveler should learn the route in terms of sensory information available to her, such as direction and quantity of turns, hills, bumps, auditory landmarks, etc.
- The traveler should also learn the route in terms of information that will assist a driver who is unfamiliar with the route. This information can include the direction of travel, direction of turns, names of streets traveled upon, names or number of intersecting streets, description and location of visual landmarks (this information can be gleaned from Internet sources such as Google Maps, GPS systems, a variety of phone apps, and drivers who are familiar with the route).

## Related Techniques

None

# **CITY BUS TRAVEL**

# CITY BUS TRAVEL

## Purpose

To travel on city buses and streetcars

## Prerequisite Techniques

Cane Placement (see the Appendices)

Congested Area

Negotiating Stairs

Seating

Touch & Drag (to locate the bus pole)

Touch Trailing (to follow the side of bus to locate the door)

Upper Hand & Forearm

## Teaching Environments

Introduce city bus travel by taking a short ride on a relatively empty bus or streetcar.

- For travelers who are unfamiliar with buses and/or streetcars, first visit the vehicle barn (bus yard) to show the traveler the interior and exterior layouts of each.

Initially, practice catching buses and/or streetcars from stops where only one line stops.

Progress to catching buses and/or streetcars from stops where several different lines stop.

Lead up to taking crowded buses or streetcars (e.g., rush hour travel) and to routes that require transferring to a second bus.

## Skills

### Locating the Bus or Streetcar Stop

1. In the absence of detecting other landmarks to indicate the location of the stop (e.g., sign pole, bench, shelter), the traveler can first walk to the nearest perpendicular street and then return by following the curb edge of the parallel street until she locates the stop.
  - Most bus stops are located near the corner. The perpendicular street, therefore, establishes a reference point from which to begin searching for the bus stop.
  - In a familiar area, the traveler may not need to locate the perpendicular street before looking for the bus stop.
  - Some street car and bus rapid transit stops are located on boarding islands/raised boarding platforms in the center of the street rather than on the

sidewalk. To access these islands, a traveler will need to cross at least one lane of the street.

2. The traveler uses the TOUCH & DRAG technique to follow the curb and locate the bus pole (if present).
  - If a shelter and/or bench are present, the traveler can locate them by using the TOUCH & DRAG technique to follow either the inside edge of the sidewalk or to follow the curb (assuming the traveler knows where the shelter and/or bench are placed). Auditory clues to indicate the location of a shelter or bench might include such things as reflected sound from the cane tip, or the sounds of people waiting in the shelter or sitting on the bench.

## **Positioning at the Bus or Streetcar Stop**

3. The traveler stands 1–2 feet back from the edge of the curb (for safety). She faces the street, angled slightly toward the direction from which the bus or streetcar will approach. She holds her cane in the vertical or semi-vertical position in her left hand while waiting for the bus or streetcar.
  - If she stands too far away from the curb or does not face the direction of the oncoming traffic, the driver may not realize that the traveler is waiting for the bus or streetcar. Conversely, standing too close to the curb may cause the driver to stop the bus or streetcar several feet from the curb, thereby interfering with traffic and making it necessary for the traveler to step into the street to reach the door.
  - Holding the cane in the vertical or semi-vertical position in her left hand ensures the following:
    - The cane will be ready for use when the bus or streetcar arrives.
    - The cane will not interfere with nearby pedestrians.
    - The traveler's right hand will be free to hold money, bus pass, or fare card and to trail the stair railing and deposit the fare.
      - An exception to this would be the situation in which the fare card scanner is known to be mounted on a stanchion located to the left of the stairs when boarding the bus or streetcar.
  - If a sign pole is present at the bus stop, the traveler should stand next to it in such a position that the pole does not block the driver's view of her cane (see Figure 2.01).
  - Standing next to the pole also positions the traveler at the approximate point where the bus or streetcar door will usually open. This facilitates locating the door.
    - If a pole is not present, the traveler can use distance awareness (in a familiar area) and traffic clues to position herself properly at the stop.
    - In some areas there may be more than one bus or streetcar line that loads and unloads passengers at the same stop. If this is the case, the traveler may need to trail a distance of one vehicle length (or more) from the pole to locate the desired bus or streetcar that may be positioned later in line.

- If the traveler misses the bus or streetcar and realizes she may have a long wait for the next one, she may choose to find a seat on a bus bench and reposition herself a few minutes before the next bus or streetcar is due to arrive.



**Figure 2.01**

The traveler stands so that the sign pole does not block the driver's view of her cane.

## Identifying and Hailing the Bus or Streetcar

1. The traveler can use the following cues to identify the approach of the bus or streetcar:
  - Distinctive sounds of the streetcar (e.g., sound of metal wheels on streetcar tracks)
  - Distinctive sounds of the bus (e.g., engine, air brakes, tire sounds, transmission)
  - Sound of pedestrians moving toward the curb or tracks
  - Sound of doors opening
  - Sound of the coin box through an open door
  - Audible announcement as the vehicle approaches the stop.

If the traveler wishes, she can also request pedestrian assistance to identify the approach of the specific bus or streetcar for which she is waiting.

If necessary, and as an additional means of attracting the driver's attention, the traveler can raise her hand to hail the approaching bus or streetcar. In some areas where buses pick up passengers at locations other than regular stops, the traveler will generally need to raise her hand to get the driver's attention.

## Locating the Door

1. The traveler locates the front door of the vehicle by listening for the following sound clues:
  - Passengers boarding or exiting

- The bus motor (commonly located at the rear of the bus) as a reference to estimate the distance to the front door
  - The air brakes or kneeler engaging
  - The front doors opening
  - The audible route number announcement heard through the open door.
2. The traveler walks toward the door using the appropriate cane technique.
    - If the bus has stopped away from the curb, the traveler can clear and step down into the street and use the TOUCH technique to locate the bus.
    - If the traveler contacts the side of the bus, she should turn toward the front door and use the TOUCH TRAILING technique to locate the door. The front door is located between the front wheel and the front bumper.

## **Identifying the Bus/Streetcar Number or Route**

1. Current technology, such as phone apps (e.g., "Next Bus" and "Real-Time [RT] Bus Tracker") and bus tracking apps made available by individual transit systems, can be used to track the arrival time of a bus at a specified location. It is still recommended, however, that the traveler verifies the bus number before boarding. To verify the information received via technology, or if the identity of the bus or streetcar is unknown, the traveler allows other passengers to exit first; then before boarding she should ask the driver to verify the route number and/or that it does stop at her desired destination.
  - If she desires, the traveler may take one step onto the vehicle before asking. This helps to ensure that the driver can hear her questions clearly.
  - The traveler, if she wishes, can also ask a fellow pedestrian to verify the route number.
2. If it is the correct vehicle, the traveler transfers the cane to her left hand (if it is not there already) and prepares to board. If it is the incorrect vehicle, the traveler steps aside and repositions herself to await the arrival of her desired bus or streetcar.

## **Boarding**

The bus driver opens the door automatically to allow passengers to enter or exit. While the driver on light rail and streetcars may open the door automatically, it is sometimes necessary for the traveler to open the door herself by pressing a button located on the door (in a position similar to where a handle would be found on a standard door).

1. Holding the fare or transit card in her right hand and the cane in her left hand, the traveler climbs the steps of the vehicle (if stairs are present) using the NEGOTIATING STAIRS technique; she simultaneously trails the handrail to the fare box or card reader to pay her fare (see Figure 2.02).
  - Holding the cane in her left hand, and the fare or fare card in her right hand, makes it easier to trail the handrail and insert her money directly into the fare box or to hold her fare card up to the card reader when she locates it.

- Some card readers are located on the left side of the front doors. Asking the driver or listening for other riders using the card reader can help the traveler identify its location. Some buses and streetcars have card readers at all entrances of the vehicle, not just the front doors.
- Contactless “smart cards” are designed to be read by the card reader when the traveler simply holds the card near the reader. Card readers give one sound (e.g., a medium tone beep) to indicate that the card was successfully read, and a different sound (e.g., three high pitched beeps in quick succession) to indicate that the card was not successfully read. If the card is not read when held near the reader, the traveler may need to physically touch the card to the reader
- In some cities, travelers pay when they exit the bus. To indicate this, the driver will usually place his hand over the fare box during boarding.



**Figure 2.02**

The traveler trails the handrail to the fare box to deposit her fare.

## 2. After boarding the bus:

- The traveler asks the driver for a transfer, if needed.
  - Some buses and streetcars only issue transfers when boarding.
  - Asking for a transfer when first boarding the bus eliminates the need to travel to the front of the vehicle to obtain a transfer before exiting the bus. This is especially helpful in areas where passengers typically exit by the rear door.
- The traveler asks the driver to please call out her stop. While some bus systems provide automatic computerized announcements of each stop, this may not be the case on all buses. If an automatic announcement system is not available, then asking the driver to call out her stop is the most convenient way for the traveler to be informed that the vehicle has arrived at her stop.
  - As an added measure, the traveler may also want to ask a passenger seated near her seat to tell her when the vehicle approaches the desired stop (in case the driver forgets).

- If the bus or streetcar does not stop at her desired destination, the traveler should ask which stop is closest to her destination and whether it is located prior to, or following, her destination. This information will help her determine which way to walk after she gets off the bus.
- The traveler asks the driver whether or not the seat next to the door is empty. If it is not, the traveler can inquire as to whether or not the seat behind the driver is empty. If this seat is not available, she can ask where the nearest vacant seat is located.
  - The seat next to the door is often best because it facilitates easy communication with the driver. Also, every time the driver opens the door he is likely to see the traveler sitting there and, therefore, be less likely to forget to inform the traveler of her stop. If the seat is not vacant, then the seat behind the driver may be the next best choice because it also facilitates easy communication with the driver.
  - Some travelers prefer not to ask where an empty seat is located, but rather to locate a vacant seat on their own.

## **Seating**

1. If desired, the traveler may transfer the cane to her right hand after paying the fare.
2. Using the CONGESTED AREA technique, the traveler moves to her seat.
  - If she wishes, the traveler can also use the UPPER HAND & FOREARM technique to locate the stanchion next to the stairs or directly behind the driver (the poles serve as convenient landmarks indicating the location of the first seat). If the traveler must travel further back in the vehicle, she can also trail the stanchion to the overhead handrail (being aware of a possible separation between the stanchion and handrail) and hold on to it for balance as she travels down the aisle.
3. The traveler can verify that no one is sitting in the seat by gently sliding the shaft of her cane laterally across the front edge of the seat. To verify that there are no objects lying on the seat, the traveler clears it before sitting down (see the SEATING technique).
  - If the traveler wishes, she can also ask a nearby passenger to verify that the seat is empty.
  - If no seats are available, the traveler can stand in the aisle and grasp a stanchion or overhead handrail to aid in maintaining her balance while the vehicle is moving.
4. She sits down and positions her cane using the CANE PLACEMENT technique (see Appendix B).
  - Proper positioning keeps her cane ready for use and avoids having it get in the way of other passengers.

- If the traveler uses a folding cane, it is best to only fold the top section. Folding only the top section keeps the cane visible to the driver and ready for use when arriving at the destination.

## **Orientation En Route**

1. Many bus and streetcar lines have annunciators that state the name of each stop as the vehicle arrives. If an annunciator is not present or cannot be easily heard or understood, the traveler can politely remind the driver to call out her stop. She can do this when she feels that the bus or streetcar might be nearing her stop (judged by time and/or distance traveled or other cues such as the number of turns the bus has made). As a back-up procedure, in case the driver forgets to announce the stop, the traveler can also ask another passenger to let her know when they are approaching her stop.
  - If a passenger informs the traveler that the bus is approaching her stop, she may pull the bell-cord (or press on the push bar or button) to signal the driver that she wishes to exit at the next stop. This step is not necessary if the driver informs the traveler that the bus is approaching her stop.
  - If the vehicle stops for more than a minute mid-route and the traveler hears sounds indicating a change of drivers, she will need to ask the new driver to signal her destination unless she is certain the previous driver has relayed the request.
2. On a familiar route, the traveler should monitor the progress of the vehicle en route to guard against missing her desired stop should the driver forget to inform her.
  - To do this, the traveler can pay attention to such cues as the number and direction of turns, number and relative location of gradients, number of stops (if a pre-determined number), volume of passengers boarding and exiting, auditory and visual landmarks, passing of certain landmarks (e.g., railroad tracks, a busy intersection, a fountain), time/distance awareness, and combinations of these factors.
  - The traveler can also use a GPS system or phone app to monitor the position of the bus along the route and determine when the bus reaches her desired stop.
3. Many buses operate on closed routes in which the routes begin at a specific location and travel to a specific destination and then back again, or they operate on a closed loop, beginning and ending at the same point. If the traveler misses her stop, she can get off at the nearest stop and walk back to her stop, or cross the street and take a bus or streetcar traveling in the opposite direction. If she chooses, she can remain on the vehicle until it returns to her stop on the way back or completes a round trip to return to her desired destination. This latter option may work better for some travelers who do not have good orientation or independent travel skills.

## **Exiting the Bus or Streetcar**

1. The traveler verifies she is at the correct location before exiting the bus.

2. The traveler should wait for the vehicle to stop before standing up so that she won't risk losing her balance as the vehicle swings toward the curb or if it stops suddenly.
  - The traveler may grasp a stanchion or overhead handrail to assist her balance as she stands up.
3. The traveler moves toward the nearest door (the rear door in some cases) using the CONGESTED AREA technique.
  - If the traveler uses the CONGESTED AREA technique with the Diagonal position, she must leave the cane tip in contact with the floor in order to locate the descending steps (if present) at the doorway. She should also hold the cane in her left hand if the door will be on her right side, and in her right hand if the door will be on her left side. In this way, as the traveler turns to exit, her cane tip will contact the steps at the doorway before her feet do.
  - After locating the stairs (if present), the traveler can use the UPPER HAND & FOREARM technique with her free arm to locate the stanchion near the door or the LOWER HAND & FOREARM technique to locate the handrail on the right-hand side of the stairs, if desired.
  - If the traveler exits at a rear door, she may need to press on a push bar located on the door or push on a plate next to the door to open it. This should only be done after the vehicle comes to a complete stop.
  - If the traveler exits at the front door, she can take this opportunity to ask the driver for more information, if needed. For example:
    - Is she at the correct destination?
    - Did the bus stop before or after crossing the intersection?
    - In which direction should she walk to find the bus or streetcar to which she will transfer?
    - Did the bus stop at a raised boarding platform?
4. The traveler walks down the stairs using the NEGOTIATING STAIRS technique.
  - She can hold onto the handrail with her free hand if she chooses.
5. Before stepping down from the last step, the traveler clears the ground with her cane to check for obstructions and to locate the curb. The traveler takes a few steps away from the vehicle quickly to make room for other people to exit or board the vehicle.
  - If the vehicle has stopped in the street, the traveler walks to the curb and steps onto the sidewalk as quickly as possible.
  - If the vehicle has stopped at a raised boarding platform, the traveler may encounter a down curb or railing indicating the entrance to a lane of traffic/the street.

## General Modifications

The guide and traveler use the BASIC GUIDING technique to board and exit the vehicle.

- The traveler may have to raise or lower her grasp on the guide's arm in order to maintain contact while negotiating steep steps on buses or streetcars.
- If seating is not available, the traveler can maintain her grasp or arm contact with the guide while riding the bus or streetcar; whenever possible she holds onto hand railings, poles, or vehicle walls for support and balance while standing.

**Note:** The above also applies to taking other forms of transportation (e.g., touring bus) with a guide.

## Common Errors and Corrections

### Error:

The traveler stands on the inside edge of the sidewalk or with the bus sign pole on her left side and does not face in the direction of oncoming traffic.

### Correction:

The traveler should stand with the bus sign pole on her right side and face oncoming traffic. In some cities, bus stop signs are placed on wide poles that can block a bus driver's view of the traveler if she stands with the pole between her and oncoming traffic. Standing facing oncoming traffic also makes the traveler and cane more visible and indicates to the bus driver that the traveler is waiting for the bus.

### Error:

The traveler fails to ask the driver to verify the bus route or number before boarding.

### Correction:

Verifying the bus route or number before boarding prevents the traveler from boarding the wrong bus.

### Error:

The traveler holds the cane in her right hand when boarding.

### Correction:

The traveler should hold the cane in her left hand when boarding. This frees her right hand to trail the handrail and to locate the fare box or card reader most easily.

### Error:

The traveler fails to ask the driver for the location of a vacant seat near the door.

### Correction:

Asking the driver for the location of a vacant seat near the door prevents the traveler from having to search for a seat unnecessarily and minimizes the possibility that she will disturb passengers already seated.

**Error:**

The traveler fails to clear the seat before sitting down.

**Correction:**

Clearing the seat before sitting down prevents the traveler from accidentally sitting on an object that may be lying on the seat.

**Error:**

The traveler fails to ask the driver to call out her stop.

**Correction:**

Asking the driver to call out her stop helps to ensure that the traveler will not miss her stop. The traveler can also ask a passenger to call out her stop (as a backup to asking the driver), but it is best not to rely solely on a passenger, who might forget or who might get off the bus before the traveler's stop.

**Error:**

The traveler allows the cane tip to extend into the aisle while she is seated.

**Correction:**

The traveler should keep the cane tip secured between her feet. This prevents her cane from interfering with other passengers. The traveler can hold the cane either vertically or with the shaft resting on her shoulder.

**Error:**

When exiting, the traveler holds her cane in the DIAGONAL position with the tip 1 inch above the floor.

**Correction:**

When exiting, the traveler should hold the cane with the tip on the bus floor until she locates the edge of the first step. This prevents her from missing the edge and falling down the stairs.

**Error:**

The traveler uses her right hand to hold the cane in the DIAGONAL position when exiting at the front of the bus.

**Correction:**

The traveler should use her left hand to hold the cane in the DIAGONAL position when exiting at the front of the bus. This places the cane tip in position to detect the edge of the step at the inside of the turn (where the traveler will contact the steps first).

**Error:**

When exiting, the traveler fails to clear before she steps onto the curb.

**Correction:**

Clearing before she steps onto the curb enables the traveler to confirm the location of the curb and to locate any obstacles to avoid walking into them.

**Error:**

The traveler fails to take a few steps away from the bus after exiting.

**Correction:**

The traveler should move 2–3 steps away from the bus after descending to make room for other passengers to get off behind her and to move a safe distance away from the bus before it begins to move.

**Error:**

While waiting for the bus, the traveler stands on the right side of the pole.

**Correction:**

The traveler should stand on the left side of the pole. This position keeps the pole from blocking the cane from the bus driver's view.

**Error:**

The traveler fails to wait for the bus to come to a complete stop before standing up.

**Correction:**

It is often difficult to maintain one's balance on a moving bus. Waiting until the bus has come to a complete stop before standing up helps to ensure that the traveler will not lose her balance.

**Error:**

The traveler stands with her toes over the edge of the curb as she waits for the bus to arrive.

**Correction:**

The traveler should stand at least 12 inches back from the edge of the curb. Standing too close to the curb can sometimes make it difficult for the bus driver to pull up close to the curb. As a result, the traveler then needs to walk a few feet into the street in order to reach the door of the bus.

## **Error:**

The traveler fails to pause and listen for passengers to exit before attempting to board the bus.

## **Correction:**

Pausing and listening for passengers to exit the bus before walking up to the door keeps the traveler from getting in the way of people who are exiting.

## **Notes for Teachers**

For travelers who are unable to take buses or streetcars due to medical reasons, many communities offer paratransit services. Paratransit programs provide door-to-door or curb-to-curb transportation services to eligible senior citizens and people with mobility impairments. Trips to such places as medical appointments and the grocery store are provided in cars, in wheelchair lift-equipped vans or small buses, and/or taxis. Users must have prior registration and may be required to purchase ride tickets.

Taxi-like services such as Uber and Lyft provide door-to-door service in most communities and, in some cities, are linked to city-run paratransit services for people who are elderly or disabled.

Some travelers who are congenitally blind might be totally unfamiliar with a bus or streetcar. Similarly, some travelers who are adventitiously blind might know what a bus or streetcar is but may have not used public transportation previously. For this reason, it may be necessary to orient the traveler to the physical features of a bus or streetcar and provide general information on such things as fares and discount fare programs, how to obtain route information from transit companies, etc.

Routes and times of departure may vary on weekdays and weekends, and may even vary during the course of a day. Buses and streetcars typically run more frequently during commute hours or during periods of peak use. Alternatively, some buses may be designated "express" during commute hours; they will stop only at a limited number of points along a route during such hours, but will stop at all points during non-commute times. Express routes are often signified by an additional symbol or letter (e.g., "X") next to the route number. Like bus rapid transit lines, express routes may board from a central island rather than the street curb.

## **General Information**

### **Fares**

**Exact change:** Drivers generally do not carry change, and travelers who do not have exact change can either pay an amount above the fare for their trip or they will be denied passage.

**Tokens:** In some areas, travelers can purchase tokens at banks or other commercial facilities. Tokens are deposited in the coin box when boarding.

**Tickets:** In some areas, travelers can purchase tickets at banks or other commercial facilities. Upon boarding, the traveler places the ticket in the ticket slot, or else hands the ticket to the driver.

**Reloadable Transit Card:** Some agencies use reloadable fare cards to accept fares. The traveler holds the card up to a specialized card reader mounted on a stanchion located near the door. Often, these cards may be used on multiple transit systems within a large metropolitan area and may include discount fares for seniors, children, and individuals with disabilities. Travelers can either apply for a discount card or purchase a regular fare card at participating locations.

**Pass:** Travelers can purchase cards on a weekly or monthly basis. They simply show the card to the driver when boarding.

- **Complete:** These passes are good for all areas within the transit system. Some regions also offer passes that are valid on multiple transit systems.
- **Restricted:** These passes act as complete passes within one zone or time period. An extra fare may be required when crossing zone divisions, exceeding time limits, and/or riding at rush hours.

**Special:** In some cities, people who are blind or disabled are able to ride for free. When this is not the case, transit districts often sell discount passes to senior citizens and people with disabilities. The traveler will need evidence of disability to purchase such passes. A doctor's letter or other proof of disability (e.g., DMV identification card) is required and must be brought to a designated transit company office.

- O&M specialists can often obtain special identification cards from the transit district that allow the O&M specialist to travel on the system for free or for the reduced fare charged people with disabilities when they are providing instruction. In addition, individuals such as family members or service providers who accompany a traveler who is unable to travel independently can also obtain these cards.

**Transfers:** Transfers are supplied to passengers who need to take more than one bus or streetcar to arrive at their destination. Rules regarding the use of transfers vary in different transit districts. Some transit systems require all passengers to take a transfer as proof of payment.

- Transfers may be color or otherwise coded and may be used only on the date of issue, within a specified time period, and perhaps in only certain general directions of travel.
- Transfers may or may not be usable for return trips.
- In most transit districts, the traveler should ask for a transfer when boarding the first bus or streetcar and hand the transfer to the driver of the next one. In some areas, however, travelers obtain transfers as they get off of the first bus or streetcar.

- In some cities, transfers cost extra money when first obtained or when handed to the driver of the next vehicle.

## **Obtaining Route and Schedule Information**

Travelers can obtain route and schedule information from transit company websites. Most companies have trip-planning information on their websites. In addition, many mapping programs also include transit options in their route-planning features. Or, travelers can call the transit company and request scheduling and route information. Depending on the traveler's needs, she can ask specific questions, as stated in the following list:

- After giving the beginning and end points of her trip, what is the number or name of the bus(es) or streetcar(s) that the traveler will take? Some buses are identified by a route number or letter; others are named according to major streets, a landmark along the route, or shopping plazas. Some are designated by both a number and a name.
- What are the exact locations for boarding and exiting the bus or streetcar at the origin, destination, and all transfer points? At which corner of the intersection does each vehicle stop (NW, SW, NE, SE)? On which street is the vehicle traveling when it stops? Does the vehicle stop before or after crossing the intersection, and does it stop at the curb or at a raised boarding platform?
- Does the bus or streetcar travel back and forth between a start point and an end point, or does it operate on a closed loop, beginning and ending at the same point?
- What is the bus or streetcar schedule for the time period during which the traveler will travel? Is the vehicle an "Express," or are there stops along the route?
  - The schedule may vary during different periods of the day, especially during rush hours and at night. It may differ on weekends and holidays.
  - Knowing how long the trip is expected to take will help the traveler estimate when the bus will be arriving at her desired stop.
- What is the fare? Is it free? Are tokens, passes, and discounts for seniors and people with disabilities available? Are transfers available if needed?

## **A few additional points**

It is sometimes helpful for the traveler to tell the transit company agent at the beginning of the conversation that she has a visual impairment and therefore needs to ask for detailed information. Most agents are willing to take the time to give additional information when they realize why it is needed.

Schedules and routes may change. The traveler can get a schedule and complete set of maps from the transit company. Transit companies revise routes and schedules periodically, however, so it is important to find out how often this typically occurs and to get updated information as needed.

The traveler should have access to the address and phone number of the transit company so she can obtain scheduling information.

Because some transit agents may be new to the job or less familiar with the system than others, it is often recommended that the traveler call for bus information more than once to verify that she has received accurate information.

It is often possible to obtain information on routes, fares, and schedules from the transit company's website or other sources, such as transit apps (e.g., Next Bus) on a smartphone.

Especially for students who have never experienced calling a transit company for information, it is often helpful to have the instructor demonstrate doing so and then role-play this experience with the traveler. Creating a fill-in-the-blank question template can also be helpful for students to ensure they ask and receive all pertinent information.

## **Suggested Teaching Sequence and Considerations**

The following sequence is common:

1. Bus or streetcar barn/yard/transit center where a bus may be on layover
2. Bus or streetcar stop
3. A ride with a guide (over a distance previously walked and/or to a motivating destination)
4. A short ride where only one bus or streetcar stops
  - The teacher models calling for information.
5. A short ride where only one bus or streetcar stops
  - The traveler calls ahead to get fare, route information, and/or the schedule.
6. A short ride from a stop where more than one bus or streetcar stops
7. A longer ride
8. A ride with a transfer
9. More difficult lessons involving such things as locating a bus stop at a shopping mall or involving other unique situations.

### **At Bus or Streetcar Stops**

The pattern or characteristics of bus or streetcar stops may vary within cities or districts. In some areas, buses and streetcars will only stop at designated stops. In other areas, they might stop at any intersection along the route, when hailed.

Bus or streetcar stops can often be identified by a bench or shelter, by poles at each end of the stop (or, in some cases, only at one end), or by painted markings in the street. There is, however, no standardization of the presence or location of these features.

The presence of many pedestrians standing along a curb (especially in a commercial area) can also indicate the presence of a bus or streetcar stop.

Be sure to show the traveler a variety of stops with different features (e.g., pole, bench, shelter, raised boarding platform) and in different locations relative to corners and other landmarks.

Bus stops are usually located on the sidewalk in unobstructed areas that are long enough to accommodate one or two buses (or possibly more in busy urban areas). Stop locations may be designated by signs, shelters, benches, or even painted markings in the street (see Figure 2.03). There should be no parking meters, cars, fire hydrants or other street signs at a bus stop.



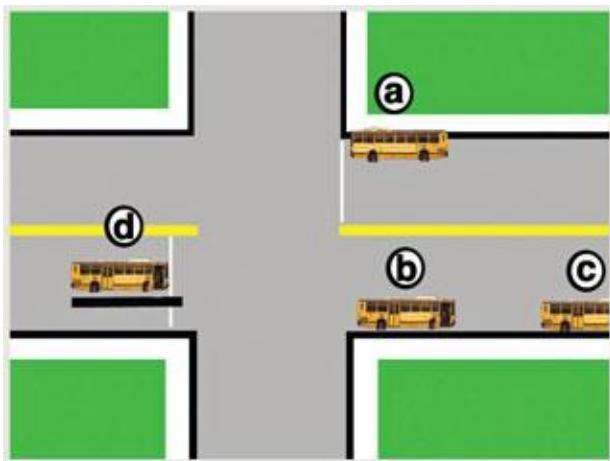
**Figure 2.03**

Stop locations may be designated by signs, shelters, benches, or painted markings in the street.

Bus stops may be located at any of the following places:

- Near the corner of the block prior to reaching the intersection (see Figure 2.04, Point a). When stopping here, the vehicle does not protrude into the intersection when boarding or exiting passengers.
- Near the corner of the block immediately following the intersection (see Figure 2.04, Point b). After the vehicle has crossed the intersection, it may stop 1–2 vehicle lengths from the intersection. By stopping here, the rear of the vehicle does not protrude into the intersection it has just passed, thus avoiding traffic congestion.
- In the middle of the block or one-half to two-thirds of the way down the block in downtown areas (see Figure 2.04, Point c). In this way, the vehicle does not protrude into the intersection, and traffic and pedestrian congestion is reduced at the intersection.
- On a safety island (see Figure 2.04, Point d).

**Note:** Occasionally the location of bus stops will vary due to route changes, emergency or environmental situations, or planned events, such as parades.



**Figure 2.04**

Bus or streetcar stops can be located a) near the corner of the block prior to reaching the intersection, b) near the corner of the block immediately following the intersection, c) in the middle of the block or one- half to two-thirds of the way down the block in downtown areas, or d) on a safety island.

### Streetcar and Bus Rapid Transit Stops

Streetcar and bus rapid transit stops are usually located on safety islands/raised boarding islands (or in painted safety areas), although in some areas passengers may actually exit into a driving lane.

### At the Bus or Streetcar Barn/Yard

Boarding, movement within the bus, and exiting may be awkward at first, especially for travelers who have no previous experience using such public transportation. It is often helpful, therefore, to provide initial instruction at the bus or streetcar barn/yard, where the traveler can take her time to explore the vehicle and gain initial practice boarding, finding a seat, and exiting the bus without having to deal with other passengers or risk taking so long to do so that she interferes with a bus's tight operating schedule.

Using familiarization or self-familiarization techniques, the traveler can explore the exterior and interior of the bus or streetcar at the barn/bus yard. Doing so can inform her about the vehicle's dimensions and features.

### Exterior points

There are usually two doors on the curb or platform side of the vehicle, although some newer and longer buses may have three doors (see Figure 2.05).

- The forward door is usually between the front wheel and the front bumper.
- The bumper and windshield wipers are located on the front of the vehicle.
- The engine is usually located in the rear of the bus.
- Round glass headlights are on the front of the vehicle; various shaped plastic tail lights are on the rear.
- Doors are labeled "front" or "back," relative to the direction of travel.



**Figure 2.05**

While there are usually two doors on the curb or platform side of a bus, some newer and longer buses may actually have three doors.

Steps lead up into bus or streetcars at both the front and rear.

- On some buses that are accessible to people with disabilities, the stairs are completely replaced by a platform (see Figure 2.06). On other buses, the front of the bus lowers first, then the steps lower further to become a platform for people using wheelchairs and for people who have difficulty climbing steps. At times, however, the driver may simply lower (kneel) the front end of the bus for elderly passengers or those who have mobility difficulties without engaging the platform stage of the process (see Figure 2.07). On some of these buses, the section designated for people with disabilities, including those using wheelchairs, is in the front of the bus; on others it is in the middle of the bus (e.g., on three-door buses). On the latter buses, people using wheelchairs board at the middle door. A ramp at this door unfolds and extends out of the bus, acting as a bridge to the curb. In these situations, the driver operates the lift for the traveler (see Figure 2.08).
- The steps on streetcars may flatten to a level that is even with raised boarding platforms found at some stations (see Figure 2.09).



**Figure 2.06**

On some buses that are designed for disabled access, the front stairs become a platform that rises up and down for wheelchair access and for people who can't climb steps.



**Figure 2.07**

On some buses without platforms, the driver can lower the front end of the bus for elderly passengers or those who have mobility difficulties.



**Figure 2.08**

On some wheelchair accessible buses, there will be a ramp that unfolds and extends out of the bus, acting as a bridge to the curb.



**Figure 2.09**

The steps on streetcars flatten to a level that is even with raised boarding platforms found at some stations.

### Interior points

The fare box can usually be located upon boarding by trailing the handrail located to the right of the front steps. If the transit system uses a fare card reader, it may be located on a stanchion to the right or left of the front door.

Seats are usually arranged facing the direction of travel. Some vehicles may have side-facing seats in the front or sometimes in the middle. These are often reserved for passengers who are elderly or who have mobility difficulties. In some vehicles, seats can be folded out of the way to make room for wheelchairs or scooters (as shown in Figure 2.10). Theater seats generally extend to the rear of the car and may end with a wide bench seat across the back of the car. There is a 3-foot gap between two rows of seats on the right side to accommodate the steps or platform leading to the rear door.



**Figure 2.10**

Buses generally have side-facing seats reserved for passengers who are elderly or who have mobility difficulties. In some vehicles, seats can be folded out of the way to make room for wheelchairs or scooters.

Stanchions, overhead railings, and handles on seats are located in various places. Vertical stanchions are generally located near the front and rear doors as well as behind the driver. Horizontal overhead handrails generally run the full length of the vehicle on each side of the aisle. There is usually a break in the bar where the rear door is located.

A call-bell cord may be located above the window (see Figure 2.11a) or a vertical call-bar may be located between the windows (see Figure 2.11b). Some buses have "stop request" buttons located on stanchions throughout the vehicle or placed between windows.



**Figure 2.11a**

A call-bell cord may be located above the window, as indicated by a label and arrow in the photo.



**Figure 2.11b**

A vertical call-bar may be located between the windows, as indicated by a label and arrow in the photo.

The rear door often consists of two narrow doors with a center opening.

- Steps at the rear door often have a pressure plate on the bottom stair to open the door, or there may be a vertical push bar or plate or button on the wall next to the door that the traveler needs to push to open it.
- On some buses, a green light above the door (often accompanied by an audible "click") signifies that the vehicle has come to a complete stop at the proper boarding or exiting location and that the door can be opened.
- The driver can also control the operation of the rear door. If the door fails to open, the traveler can signal the driver by calling out, pulling the bell cord, or pressing the push bar, which is often located above and to the right of the door.

Ventilation fans are sometimes located on the ceiling.

Windows may open vertically on older buses, and may slide horizontally on newer buses. Windows may not open on air-conditioned buses.

Handrails are usually located in stairwells of buses and streetcars, and are usually found on both the right and left sides.

The streetcar floor at the doorways will be level with the raised platform found at some stops and will change to stairs when passengers board from, or exit to, a curb or safety island at street level.

### **Taking a Trip**

Initially, the teacher will ride with the traveler. Later, the teacher may board and ride the bus and/or streetcar separately from the traveler, pretending to be just another passenger. This gives the traveler a greater sense of independence and also facilitates easier access to other pedestrians and passengers when soliciting assistance.

Buses and streetcars are often more crowded during rush hour. It can therefore be helpful to schedule initial lessons during non-peak times and to schedule trips during busier times when the traveler needs to practice obtaining assistance from other passengers.

## **Related Techniques**

None

# **SUBWAY TRAVEL**

# **SUBWAY TRAVEL**

## **Purpose**

To travel on subway or elevated transportation systems, including light rail systems

## **Prerequisite Techniques**

Cane Placement (See Appendix B)

Congested Area

Seating

Touch (Constant Contact)<sup>1</sup>

Touch & Slide<sup>1</sup>

Touch & Drag (to follow platform edge to locate the train)

Touch Trailing (to follow the train to locate the door)

Upper Hand & Forearm

## **Teaching Environments**

Introduce subway travel by taking a short ride on a relatively empty subway car.

- For travelers who are unfamiliar with subways, first visit the subway barn to show the traveler the interior and exterior layouts of a subway car.

Initially, practice catching the subway from platforms where only one line stops.

Progress to catching the subway from platforms where several different lines stop.

Lead up to taking a crowded subway train (e.g., rush hour travel).

## **Skills**

### **Locating the Station Entrance**

1. The traveler can call the transportation company for information on the location of the entrance/s to the subway station (see "Obtaining Information From the Transit Company").

The location of the entrance can sometimes be determined by the sound of pedestrians descending or ascending stairs.

At times, wind or train sounds may be heard emanating from the station.

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<sup>1</sup> Travelers may choose to use either the TOUCH & SLIDE or the TOUCH (Constant Contact) technique to locate the gap between the platform and the train.

## Entering the Station and Platform Areas

1. The traveler locates the fare card or token machine and purchases her fare. She can also use the machine to check the balance of or add money to her transit card (see Figure 3.01). The traveler then locates the turnstile or entrance gate and pays her fare. She does this by inserting the card or token in the appropriate slot, by tapping her fare card on the card reader, or by holding her fare card flat against the surface of the reader.
  - Depending upon the layout of the station, the fare box, fare gate, and information booth may be located upstairs, downstairs, or at street level.
    - It is important to always use the handrail when ascending or descending stairways or escalators in a station. Pedestrians on the stairs or escalator who may be rushing past to catch a train can bump the traveler accidentally.



**Figure 3.01**

Tickets or tokens can be purchased at designated machines in the subway station.

2. The traveler enters the platform area. Many travelers prefer to use the TOUCH (Constant Contact) technique in the platform area because they feel this method will most reliably detect the edge of the platform should they get too close to it.
  - In areas where it is highly congested, the traveler may choose to slow her pace and use the CONGESTED AREA technique if she feels that her cane might pose a tripping hazard to others when fully extended.

## Walking Safely on the Platform

1. Depending on a traveler's skill and confidence and the presence or absence of a detectable warning surface (see Figure 3.02), the traveler can choose from the following methods for walking safely on a platform:
  - Use the TOUCH & DRAG technique to follow the detectable warning surface along the edge of the platform to the desired spot.
    - If the traveler hears a train pulling into the station while following the detectable warning surface, she should step away from the platform edge until the train has stopped, then use auditory information to locate the door.

If she does not wish to board that train, she should wait until the train departs the station before continuing to follow the detectable warning surface to her desired boarding location.

- If a wall is present that runs along the length of the platform, the traveler can follow it to the desired spot on the platform. If a wall is not present or if the traveler prefers not to trail it, she should try to stay near the middle of the platform, or at least 3–4 feet away from the platform edge. Standing on the detectable warning surface is never recommended because doing so would place the traveler too close to the edge of the platform or an approaching train.



**Figure 3.02**

Some stations have a detectable warning surface at the edge of the platform.

2. Upon arriving at her desired boarding location, the traveler stands facing the platform edge at a distance of at least 3–4 feet from it. She positions her cane either vertically or semi-vertically across her body.
  - A distance of 3–4 feet from the platform edge ensures the traveler maintains a safe distance from the moving train.
  - Holding her cane in either a vertical or semi-vertical position makes her cane visible to others while keeping it out of the way of other people.

### **Identifying the Approach of the Train**

1. The traveler can identify the approach of the subway train using the following cues:
  - The sound of the engine or of the train wheels on the tracks
  - Wind and vibration created by the approaching train
  - Floodlights or signs that blink when the train approaches
  - Announcements at the arrival of each train over a loudspeaker system
  - A train's honking horn as it approaches the station.

## Boarding the Train

1. When the subway train comes to a complete stop, the traveler locates the door by the sound that it makes as it opens, by the sounds of passengers boarding or exiting and/or of voices coming from inside the train car.
  - When looking for the door, it is often helpful to walk toward the front of the train rather than toward the rear. Walking toward the front of the train makes the traveler's cane more visible to the train operator, who in turn, may be more patient in allowing time for the traveler to board before closing the doors.

**Note:** A train may occasionally stop and then move forward to readjust its position at the platform before the doors open.

2. The traveler allows passengers to exit the car. She then approaches the door using the CONGESTED AREA technique either with the TOUCH (Constant Contact) technique or in conjunction with the TOUCH & SLIDE technique.
  - Using the TOUCH (Constant Contact) or the TOUCH & SLIDE technique helps ensure that the cane will locate the gap between the train car and the platform edge. The gap can be about 3 inches wide.
  - If the traveler contacts the side of the train car, she can use the TOUCH TRAILING technique to locate the doorway. Her cane tip should contact the train car at least 4–6 inches above the ground in case the floor of the car is higher than the platform (see Figure 3.03).



**Figure 3.03**

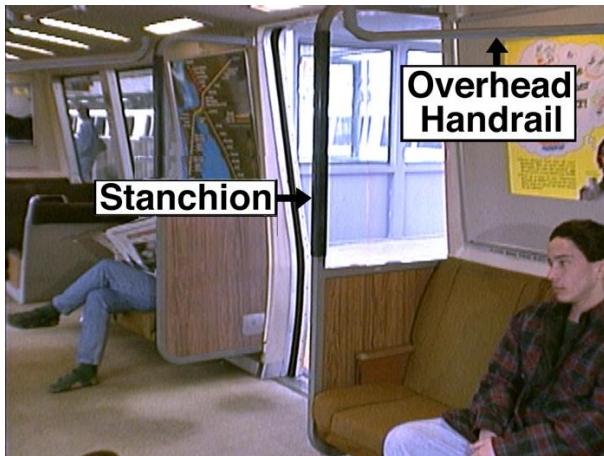
The traveler uses the TOUCH TRAILING technique as she follows the side of the train car to locate the doorway.

3. Using the CONGESTED AREA technique (TOUCH technique with Constant Contact), the traveler clears and then enters the car, being sure to step over the gap between the car and the platform.
  - Clearing enables the traveler to detect the floor of the car, verifying that she will be stepping into the car and not into the space between subway cars.

- The traveler should never extend her cane downward between the side of the car and the platform in case it contacts one of the high-voltage electric "collector shoes." Collector shoes are devices that are attached to the train and that slide along the rail to transmit electricity to the train motors.

## Seating on the Train

1. Using the CONGESTED AREA technique, the traveler moves to her seat.
  - Often seats nearest the door are reserved for the elderly or for passengers who have mobility impairments.
  - If she wishes, the traveler can also use the UPPER HAND & FOREARM technique to locate the stanchion next to the door (the pole serves as a convenient landmark indicating the location of the nearest seat). If the traveler must move farther back down the aisle, she can also trail the stanchion to the overhead handrail (being aware of a possible separation between the stanchion and overhead handrail) and hold on to it for balance as she walks (see Figure 3.04).
  - The traveler can verify that no one is sitting in the seat by gently sliding the shaft of her cane side-to-side across the front edge of the seat (see Figure 3.05). If the traveler wishes, she can also ask a nearby passenger to verify that the seat is empty.
    - If no seats are available, the traveler should stand in the aisle and grasp an overhead handrail or stanchion to aid in maintaining her balance while the vehicle is moving.
    - Passengers should never lean against the doors at any time in case they open unexpectedly.



**Figure 3.04**

Stanchions and overhead handrails can provide support for standing passengers as the train is moving, as shown with labels and arrows in the photo.



**Figure 3.05**

The traveler verifies that no one is sitting in the seat by gently sliding the shaft of her cane across the front edge of the seat, as shown by a white arrow in the photo.

2. Upon locating a seat, the traveler first verifies there are no objects lying on it by clearing it using the SEATING technique. She then sits down and positions her cane using the CANE PLACEMENT technique.
  - Proper positioning keeps the cane ready for use and keeps it from interfering with other passengers.

## Orientation En Route

It is important for the traveler to always maintain her orientation to guard against missing her desired stop.

1. To help maintain her orientation, the traveler can count the number of stops, and/or use such sensory information as turns, gradients, movements from below to above ground, doors opening and closing, audible announcements, and passengers boarding and exiting.
  - Stops at locations other than stations (e.g., to avoid collisions at points along the route where tracks cross each other or when there is another train on the track ahead) can generally be distinguished from regular stops because the doors will not open.
  - Some subway systems announce the stops over a loudspeaker system.
  - Most subways have a predetermined number of stops but additional stops are sometimes made to pick up maintenance workers or change operators.
2. For added security, the traveler can ask a nearby passenger to tell her when the train is approaching her stop. This is especially helpful if she is unfamiliar with the route, loses track of the train's location on the route, or if she has difficulty maintaining her orientation on the subway.
3. If necessary, the traveler can contact the train operator using the intercom at the end of the car.

If the traveler should miss her stop, she can use any of the following strategies to get to her destination.

1. Get off at the next stop and then take the subway train going in the opposite direction back to her desired destination.
  - If needed, the traveler can ask nearby pedestrians or the kiosk attendant for information about where she is and how to get back to her desired destination.
2. Stay on the train until it reaches the end of the line and then exit when it arrives at her desired stop on the return trip.

### **Exiting the Train**

1. The traveler listens for the announcement of her stop or recognizes it using other sensory information, as listed above.
2. When her stop is announced, the traveler waits for the train to come to a complete stop before standing up.
3. Using the CONGESTED AREA technique (TOUCH technique with Constant Contact or with the TOUCH & SLIDE technique), the traveler locates the doorway, the gap, and any level difference between the train floor and the edge of the platform.
4. The traveler uses her cane to clear the platform immediately outside of the door; she then steps onto the platform, being sure to step over the gap.
5. The traveler steps away from the train using the CONGESTED AREA technique.
  - If the traveler wishes to use the TOUCH technique in the station, she should take several steps away from the train to make room for other passengers to exit before stopping to adjust her grasp on the cane as she switches from the CONGESTED AREA technique to the TOUCH technique.

### **Exiting the Station**

1. The traveler can locate the station exit by
  - Noting the travel direction of passengers exiting from the subway
  - Using other sensory information to locate stairs, escalator, elevator, turnstiles, or the information booth
    - Stairs to the street can sometimes be perceived by street sounds coming from the stairwells.
    - Some stations may have exits that lead directly into stores or shopping areas.
    - In some stations, the traveler can locate the wall and then follow it to locate the stairs or escalator.
2. In order to locate the stairs or escalators from the train, the traveler can listen to the direction in which others are walking. If there are no people, she can wait until the train leaves and then walk parallel to the platform edge until she hears the escalators or locates the stairs.

## Common Errors and Corrections

### Error:

The traveler stands 2 feet from the platform edge while waiting for the door to open.

### Correction:

Standing at least 3–4 feet from the platform edge while waiting for the door to open allows room for people to exit the train before the traveler boards. It also prevents the traveler from standing dangerously close to the platform edge as a train either pulls into or departs from the station.

### Error:

The traveler uses the standard TOUCH technique to enter the subway car.

### Correction:

Using the TOUCH & SLIDE or TOUCH (Constant Contact) technique enables the traveler to locate the gap most reliably when entering the subway car.

### Error:

The traveler fails to clear the platform before she exits the train.

### Correction:

Clearing the platform before exiting the train helps to prevent the traveler from bumping into objects or people near the door.

### Error:

The traveler fails to take 3–4 steps away from the train before stopping to change from the CONGESTED AREA position to the standard TOUCH position.

### Correction:

The traveler should take 3–4 steps away from the train before stopping to reposition her cane. This leaves room for other people to exit the train behind her.

### Error:

The traveler fails to clear with her cane before stepping into the subway car.

### Correction:

Clearing with her cane before stepping into the subway car enables the traveler to identify the floor of the car and to verify that she is stepping into a car and not accidentally stepping into the space between cars.

## Notes for Teachers

Station design, procedures for paying the fare, etc., can vary between subway systems and sometimes even between stations within one system. Fares are usually paid upon boarding, either at the station entrance or by using vending machines or card readers located on the platform. In many light-rail systems there is no entrance gate through which the traveler passes to pay her fare; riders are instead expected to have a valid card or ticket, which the transit official may ask to see once the traveler is seated on the train. It is, therefore, important to assess each station individually and to be thoroughly familiar with the system before teaching it.

A congenitally blind traveler might be totally unfamiliar with a subway travel. Similarly, an adventitiously blind traveler have a general awareness of subways but might have never ridden on a subway train herself.

Teach the traveler about fares, train schedules, obtaining information from the transit company, train and station layouts, and emergency procedures.

Some local blindness agencies may have tactile or descriptive maps of subway stations.

## General Information

### Platform Safety

Trains are typically boarded from platforms raised above the track; therefore, the traveler must be aware of the danger of a drop-off at the platform edge. Many stations have tactile and/or visual detectable warning surfaces along the platform edge to alert travelers that they are approaching the platform edge. Some surfaces also have specific visual and/or tactile markers indicating the point along the platform edge at which the doors will open when the train stops (see Figure 3.06). Although ADA Accessibility Guidelines (ADAAG) requires that detectable warning surfaces be placed on all newly constructed or altered transit platforms (U.S. Access Board, n.d.), these surfaces are not present at all stations. For this reason, the traveler must use proper cane technique at all times when walking on the platform.



**Figure 3.06**

Detectable warning surfaces along the platform edge alert people that they are dangerously close to the edge. Visual or tactile markers on these surfaces indicate positions at which the train doors will open.

In addition to or instead of a tactile and/or visual detectable warning surface along the platform edge, some subway stations are equipped with platform walls to prevent people from accidentally stepping off the platform. These walls (a.k.a., "screens") have doors that open only when a train is present and when the train doors are aligned with them (see Figures 3.07a and 3.07b). Furthermore, some stations have markings on the floor showing where to stand while waiting for a train.



**Figure 3.07a**

When a train is not present, the doors of the platform screen remain closed to prevent people from stepping off the platform edge.



**Figure 3.07b**

When a train is present, the doors of the platform screen are opened to allow passengers to board or exit the train.

### Fares

**Tokens:** Travelers can purchase tokens from the agent's booth. Sometimes tokens can be purchased in advance at banks or other designated commercial facilities. Tokens are deposited in a fare box at the turnstile leading to the platform area.

**Paper Fare Cards:** Travelers can purchase paper fare cards from designated machines in the station. These fare cards may be good for one ride or for a specific dollar amount that may be good for several rides. The traveler places the fare card in a slot at the entrance turnstile before passing through it; the card is then returned to the traveler as she passes through the gate (see Figure 3.08). Upon exiting the station at her destination, the traveler places the card in the exit turnstile. If the traveler is using a multiple ride card, the card will be returned to her automatically as she passes through the fare gate (as long as there is money remaining on the card).



**Figure 3.08**

Tickets are inserted into a slot in the front of the fare gate. The ticket is then returned through a slot on top of the fare gate as one passes through the open gate. The insertion and return places are indicated by labels and arrows in the photo.

**Reloadable Transit Card:** Some agencies use reloadable smart cards to accept fares. These cards may be used for rides on multiple transit systems within a large metropolitan area and may include discount fares for seniors, children, and individuals with disabilities. Travelers can either apply for a discount card or purchase a regular fare card at participating locations.

**Reduced Fare Cards** are often sold to senior citizens and people with disabilities. The traveler may need evidence of age or, in the case of disability, a transit company-issued ID card. The latter can often be obtained by bringing a doctor's letter or other proof of disability (e.g., DMV identification card, document from a designated state or federally funded agency such as the Department of Rehabilitation, a valid card issued by another transit agency) to a designated transit company office.

- Travelers can purchase reduced-fare cards at transit offices; in some cities they can also be purchased in the subway station itself. In many cities, travelers can also purchase such cards at banks, savings and loan offices, some community-based organizations, some retailers, and other designated commercial facilities.

**Transfers:** Unlike bus travel, transfers are generally not required to transfer from one subway line to another as long as the traveler does not leave the station.

**Note:** O&M specialists can often obtain special identification cards, sometimes called "Attendant Identification Cards" from the transit district. These cards allow O&M specialists to travel on the system for free or for the reduced fare charged to people with disabilities while they provide instruction. To obtain a card, O&M specialists generally need to provide a letter written on school or agency stationery or other documentation verifying employment as an O&M specialist. In addition, individuals such as family members or service providers who

accompany a traveler who is unable to travel independently can also obtain these cards.

## Scheduling

The information needed will vary depending on use.

- The traveler should have access to the address and phone number of the transit company so she can obtain scheduling information.
- Schedules and routes may change. The traveler can get a schedule from the transit company. Transit companies revise schedules periodically, however, so it is important to find out how often this typically occurs and to get updated information as needed.

## Obtaining Information from the Transit Company

The traveler can call the transportation company and request scheduling, fare, and route information. As an alternative to calling the transit company, it is often possible to obtain information on routes, fares, and schedules from the transit company's website or by using a smartphone app.

If the traveler chooses to call the transit company, she can ask specific questions, as stated in the following list:

- Giving the beginning and end points of her trip, what is the number, name, or other designation of the subway route(s) the traveler will take? How many stops will the train make from the station of origin to the destination?
  - Some lines are identified by a number or a color; others are named according to the city of the final destination, etc.
- What is the exact location of the subway station entrance/exit at the origin and destination?
  - At which corner of the intersection is the entrance/exit located (NW, SW, NE, SE)? Onto which street does the entrance/exit open? Does the entrance/exit lead directly to or from a shopping mall or other environment?

**Note:** Some stations have several entrances/exits, while others have only one.

- If the traveler wishes, she can ask if there is any pattern to the location of subway entrances, such as before or after intersections, mid-block, every tenth perpendicular street, etc.
- What is the train schedule for the time period during which the traveler will need transportation? Is the train an "express," or are there stops along the route?
  - The schedule may vary during different periods of the day, especially during rush hours and at night. It may also differ on weekends and holidays.
- What is the fare? Are tokens, multiple ride cards, reloadable transit cards, and discounts for seniors and people with disabilities available?

Questions the traveler may want to ask of either a transit company or official or, perhaps more effectively, of a person at the subway station itself are listed below.

- Where are the turnstiles or fare gates located?
- Where is the boarding platform (e.g., how many floors up or down from the station entrance or turnstile)?
- Where along the platform (e.g., front half, middle third) will the train stop?
- Is the boarding platform a center or side platform?
  - If it is a center platform, on which side of the platform should the traveler wait for the train?
- Is the destination platform a center or side platform?
  - This information will tell the traveler on which side of the train to anticipate the doors opening.

It is sometimes helpful for the traveler to tell the transit company agent that she has a visual impairment and needs to ask for such detailed information. Most agents are willing to take the time to give additional information when they realize why it is needed.

- For students who have never experienced calling a transit company for information, it is often especially helpful to have the instructor demonstrate doing so and then role-play this experience with the traveler. Creating a fill-in-the-blank question template can also be helpful for students to ensure they ask and receive all pertinent information.
- Because some transit agents may be new to the job or less familiar with the system than others, it is often recommended that the traveler call for subway information more than once to verify she received accurate information.

## Suggested Teaching Sequence and Considerations

The following sequence is common:

- Visit the subway barn/yard.
- Visit a subway station.
- Take a short ride when the traveler calls ahead to get fare, route information, or schedule.
- Take a longer ride.
- Take a ride involving a transfer.

### At the Subway Barn/Yard

Boarding, movement within the train, and exiting may be awkward at first, especially for travelers who have no previous experience using such public transportation. It is often helpful to provide initial instruction at the subway barn, where the traveler can take her time to explore the train and gain initial practice boarding, finding a seat, and exiting the train without having to deal with other passengers or risk taking so long to do so that she interferes with the train's tight operating schedule. It may also help the

traveler to practice locating the train door when the station is quiet before trying to do so in crowded or actual travel situations.

Using familiarization or self-familiarization techniques, the traveler can explore the exterior and interior of the subway train at the barn. Doing so can inform her about the vehicle dimensions and features.

### **Exterior points**

Note the number of cars on a train, which may vary between routes and at different times of day (e.g., peak vs. non-peak hours).

Note the number and relative locations of the doors.

There are usually two or three doors on each side of the vehicle. Only the doors on the platform side will open.

A chime will ring immediately before the doors close. It is important that the traveler not try to rush through the doorway after the chime rings. If she does so, there is the possibility that she might be caught in the closing doors. This would be unlikely to injure her, but subway trains are unable to move before the doors close completely; and if the doors are blocked, they will need to be “recycled” (opened and closed again), delaying the train’s departure from the station.

There may be a dangerous gap (sometimes protected by a gate or other physical barrier) between train cars (see Figures 3.09a and 3.09b).



**Figure 3.09a**

Dangerous openings may be located between cars of the train.



**Figure 3.09b**

Between-car barriers are designed to prevent people from stepping between cars instead of stepping into an open doorway.

### Interior points

The types and locations of seats may vary from system to system, or even from train to train. On some train cars, the seats may all face the center aisle; on others, they may face forward and/or backward; on still other trains, some seats may face forward or backward, and there will be additional seats next to the doors that face the center aisle and that are reserved for people with mobility impairments. On some cars, there may be areas near the door where the seats have been removed to provide space for wheelchairs or bicycles.

For moving between cars, if necessary, doors are located at each end of the cars (except the lead and end cars) to allow travel between the cars. In some subway systems these doors are routinely used by passengers; in other systems these doors are not intended for passenger use, but are used by transit personnel to move between cars as necessary or to evacuate passengers in case of an emergency and can be dangerous to use while the train is in motion.

The location of handrails, stanchions, dividers, overhead handrails or hand grips (loop or stirrup-shaped handles suspended from the overhead handrails by straps)

The location of desirable standing areas in crowded cars

The location of emergency brakes, intercom, and fire extinguisher

Emergency door releases are generally located above the seats next to the door. To activate them, one may need to pull a cover panel away and then move a lever (see Figure 3.10)



**Figure 3.10**

Emergency door releases are generally located above the seats next to the door, as indicated by a label and arrow in the photo.

An operator call intercom is located at the end of each subway car (see Figure 3.11a). This intercom is often located on the wall to the side of the end door and is usually located about 4–5 feet above the floor. The traveler can press the intercom button and speak to the train operator, if necessary. The operator will generally not speak unless spoken to. The car identification number is usually posted near the intercom (see Figure 3.11b).



**Figure 3.11a**

An attendant/operator call intercom is located at the end of each subway car, as indicated by a label and arrow in the photo.



**Figure 3.11b**

The car identification number is usually posted near the intercom, as indicated by a label and arrow in the photo.

## The Subway Station

Subway stations can have a variety of designs. While most ticket areas are at ground level, this may not always be the case. In addition, boarding platforms may be located at ground level, above or below ground level, or even a combination of both, depending upon the station.

Using familiarization or self-familiarization techniques, the traveler can explore the unpaid area of a subway station (the area traversed prior to passing through the fare gates).

- **Station entrance**

The number, direction (enter or exit), and location of stairs relative to:

- Parallel/perpendicular streets
- Landmarks and/or bus stops
- Sidewalks and curbs

- **Station agent's booth**

There is generally an information booth located next to or, sometimes, between, the fare gates (see Figure 3.12). There is often someone in the booth who can answer questions about schedules and routes. The booth usually has a small speaker or a small opening in the window at about 4 feet above the ground through which it is possible to speak to the attendant. While the booths are usually staffed, there may be times when the attendant is away from the booth for a few minutes (e.g., while assisting a passenger to use the fare card machine; when taking a break).



**Figure 3.12**

An information booth is generally located next to or, sometimes, between the fare gates.

- **Fare-card or token machines**

The traveler can purchase a paper fare card at a special machine located near the entrance fare gates. These machines generally accept one, five, ten, and twenty dollar bills; nickels, dimes, and quarters; as well as credit or debit cards. Some machines may even accept fifty cent or dollar coins. The traveler can insert the exact amount of money needed for her planned trip or she may pay a greater amount and have the additional money remain on the card as a credit toward her next trip. Some ticket machines allow a traveler to designate a specific value for a ticket being purchased and will provide immediate change for any overpayment.

When inserting paper money, it is important that the bill be oriented in a specific way, usually with the picture facing upward and the top of the figure's head pointing toward the right-hand side. If the bill is inserted incorrectly, it will be returned. By systematically rotating the bill, the traveler eventually will be able to insert the bill in an orientation in which it will be accepted. Occasionally, worn bills will also be returned. Sometimes folding and then unfolding a worn bill lengthwise may enable it to be read by the scanner. If this does not work, it will be necessary to use a crisper bill. In some areas these machines have audio output.

In some areas, people who are disabled are now able to purchase a reduced fare card at the fare card machine. For transit agencies that accept reloadable fare cards, travelers can tap their cards flat against a special card reader located on the face of the fare-card machine in order to both check their balance and add fare to their cards.

If the subway system uses tokens, then there may be machines near the fare

gate that provide tokens and return any change due to the traveler. In some stations, however, it may be necessary to buy a token from an attendant in the information booth.

- **Change machines**

When machines that allow passengers to purchase exact value tickets are not available, stations generally have change machines located near the fare card machines. By inserting a one or five dollar bill (and in some areas even greater denominations) into the machine, the traveler can receive the money value in coins. This allows the traveler to purchase a fare card for the exact amount rather than paying more than necessary and having the additional money on the card as a credit toward her next trip.

- **Fare gate or turnstile**

In some stations the fare gates may be designated solely as entrance or exit gates (see Figure 3.12 above); in other stations, a fare gate may be an entrance during certain hours of the day and an exit during other hours. In this latter case, a majority of the fare gates may serve as entrances during morning commute hours and as exits during the afternoon and evening hours. Usually, the fare gates furthest to the right are designated for movement in the traveler's direction.

There will generally be a short wall running alongside the right-hand side of each fare gate (see Figure 3.12, above). The wall will have a slot into which the traveler can insert a token or fare card and a slot through which the fare card is returned after the fare gate opens. For subway agencies that accept reloadable fare cards, a card reader will usually be located on the top surface of the wall or on the inside, vertical surface of the wall at an accessible gate. When the fare gate is designed for single direction use only, the pay slot will only be located on fare gates operating in the traveler's direction (entering or exiting). When the fare gate is designed for use in either direction, it will generally return the card or token if it is inserted in a direction opposite that which the fare gate is operating at that time.

The fare card must be inserted in the correct orientation so the magnetic stripe that carries information about the balance on the card can be scanned by the technology. If the traveler inserts the card incorrectly, the card will be returned. In some transit systems, the fare card will have a small hole in one corner to assist in identifying the correct direction to insert the card. If there is no tactile identifier, then the traveler will need to insert the card in varying orientations until the fare gate accepts it.

On some subway systems, the fare gates may have separate lights indicating the direction they are operating. It may be possible to determine the direction by

feeling the warmth given off by the lights. For example, one light may mean that the gate is operating in the traveler's direction and another light (or no light) may mean that it is operating in the opposite direction.

To enter through a fare gate, the traveler must have at least the minimum amount remaining on her card to travel to the nearest stop. If she does not have sufficient fare remaining on the fare card, the gate will not open and the card will be returned. The traveler can then add money to her card at a fare card machine generally located near the entrance fare gate.

To exit, the traveler must have enough money remaining on the card to pay for the trip taken. If she does not have sufficient fare remaining on the fare card, the gate will not open and the card will be returned. Some gates make an audible sound indicating that there is a sufficient fare on the card to pay for the trip and a different sound indicating an insufficient fare. The traveler must then add money to her card at an Add Fare machine (see Figure 3.13) generally located near the exit fare gate. To do so, the traveler inserts her card into a slot in the machine. The additional amount needed to pay for the ride will be displayed in a window (if the traveler does not already know how much additional fare that she must add, she may request sighted assistance to read the amount displayed). After inserting the additional fare, the machine will issue a new fare card through a labeled slot. As a special note, the Add Fare machine cannot upgrade a card beyond the amount needed to pay for the ride. It will automatically return any change due to the traveler. The Add Fare machine, however, will recognize special senior citizen/disabled fare cards and charge the appropriate reduced fare.

If the amount remaining on the card is the exact price of the trip, the paper card will not be returned after the fare gate opens.



**Figure 3.13**

Passengers can add money to the fare card at an ADDFARE machine.

Using familiarization or self-familiarization techniques, the traveler can explore the “paid” area of a subway station (the area traversed after passing through the fare gates).

- **Bus Transfer machines**

Bus transfer machines are generally located inside the paid area of the station and are often located near the fare gates and the Add Fare machine. The traveler presses a button on the front of the machine and a bus transfer ticket is issued through a slot on the front of the machine (see Figure 3.14). Often a buzzer will sound as the transfer is issued. In large metropolitan areas where reloadable transit/fare cards are accepted across multiple agencies, the transfer discount will be applied automatically when using the same reloadable fare card on both forms of transportation.

- Depending upon the policy of the transit system, the transfer will allow the traveler to take a bus either without charge or for a reduced fare (sometimes depending on the distance to be traveled by bus). Some transfers also allow a discounted return ride to the subway station within a prescribed period of time (e.g., two days). Some transfers are valid only for a few hours.
- In some cities it is necessary to purchase a bus transfer by inserting a set amount of money into the machine before pressing the button.
- On some transit systems it is necessary to obtain the bus transfer at the boarding station. On other systems it is obtained at the destination station.



**Figure 3.14**

In some stations passengers can obtain a bus transfer ticket from a specially designated machine prior to exiting the paid area of the station.

- **Elevators**

In general, elevators in subway stations are self-service. The location of the elevators is not consistent, however, and it may be helpful to contact the transit company before traveling to get specific details of their locations relative to boarding areas and/or other landmarks. In some cases, elevators completely bypass the mezzanine and the fare collection areas. In these situations, there will

be fare collection equipment installed near the elevator that enables the traveler to use the elevator in conjunction with a fare card. Elevators usually have a button labeled "Press to Talk" or "Agent Call" that enables travelers to speak with an attendant, if necessary.

- **Escalators**

Escalators generally operate in the direction that would be used by the greatest number of people. This may vary by time of day and from station to station. Upon request, station agents may have the authority to temporarily redirect an escalator during off-peak hours.

- **Telephones**

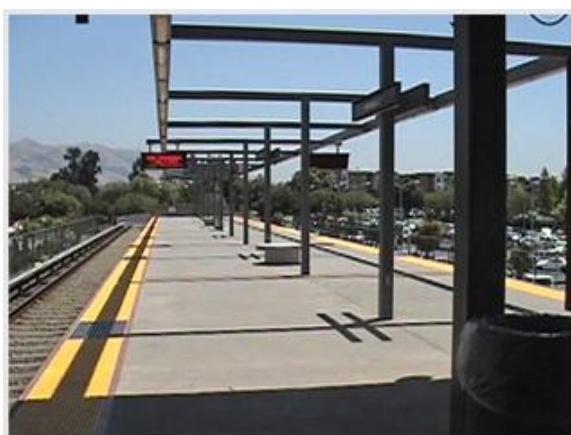
Subway stations generally have courtesy telephones that provide a direct connection to the station agent's booth. Passengers can use the courtesy phone to obtain information about train arrivals and departures and track locations, or to ask for assistance. In addition, public phones are often found within both the paid and unpaid areas (although they are becoming less common in most cities).

- **Other**

Some stations may also have benches, newsstands, restrooms, and perhaps even a food stand or snack bar.

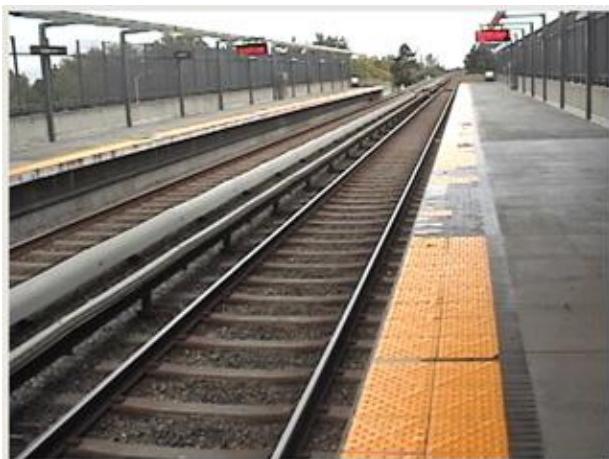
## The Platform

There are two types of platforms: (a) center platforms (also called double-sided or island platforms) and (b) side platforms (also called single-sided platforms). Naturally, center platforms will have edges and tracks on both sides; and side platforms will have an edge on the track side and a wall on the opposite side (see Figures 3.15a and 3.15b). When standing on a center platform, trains going in the traveler's desired direction will usually approach from either the left or right, depending upon the transit line. When standing on a side platform, trains will generally approach from the left-hand side. A train entering a station with a center platform that is at the end of a line, however, may approach from either the right- or left-hand side and stop on either side of the platform.



**Figure 3.15a**

A center, or island, platform



**Figure 3.15b**

A side platform

If the traveler exits the train and wishes to catch a train going in the opposite direction (e.g., to return to a missed stop), she can simply walk across a center platform to the other side. If there is a side platform present, then the traveler will generally have to take stairs, an escalator, or elevator to another level, cross over (or under) the tracks, and then travel back to the platform level to arrive at the platform for travel in the opposite direction. Some stations (e.g., those at stations where two or more lines intersect) may have a number of staircases or escalators leading to various track levels, each with platforms serving trains traveling in different directions.

Benches, signs, and trashcans are generally located in the middle of a center platform and along the wall of a side platform. There also may be structural columns located on a platform that may vary in location from platform to platform.

Conduct several lessons in which the traveler's objective is simply to locate and position herself on the platform for boarding. This can be done either before or after travel is introduced.

### Public Announcements

There may be more than one subway line that stops at a given station, especially in large metropolitan areas. Identifying information, such as a color-coded stripe, on the front of the cars or destination signs on the front of the first car, is generally present (see Figure 3.16). In addition, subway stations generally have a public address system for making announcements, such as identifying the route number or name of an approaching train, giving an estimated time until the train's arrival, or informing passengers of delays. In some stations, such announcements are made silently by projecting important information on video screens hung from the ceiling in the waiting area. When information is not available auditorily, the traveler may have to ask a nearby pedestrian to let her know when her specific train arrives.



**Figure 3.16**

This train is identified by a destination sign and a color-coded stripe on the front of the car.

Once the train leaves the station, the name of the next station is often announced over the train's public address system. The name may also be announced as the train approaches the next station. In some cases, the operator will also announce on which side of the train (left or right) the doors will open.

## **Emergency Procedures**

### **Fall onto the tracks**

Each set of train tracks consists of three parallel rails. The rail farthest from the platform is called the "third rail" and is partially covered by an arched plate (see Figure 3.17). This rail carries most of the electrical power in the system and conducts electricity to the other two rails. These other rails will receive increasing amounts of electricity as a train approaches the station. Because of the high levels of electricity passing through the rails (as much as 750 volts through the third rail), it is important to never touch the rails with a metal cane because the cane can act as a conductor of electricity.



**Figure 3.17**

The “third rail” is partially covered by an arched plate, as indicated in the photo by a label and arrow.

If the traveler falls into the track area and hears a train approaching before she can get back onto the platform, she should immediately lie down in the designated safe space until the train passes. In some subway systems, the designated safe space is a crawl space about 3–4 feet deep under the platform. It is large enough for a person to lie down—not sit or stand—safely away from the tracks while the train passes by. Because the rails will conduct electricity, especially as a train approaches, and because the train cars themselves have connector paddles on both sides that continuously conduct electricity, it is important that the traveler lie as far into the space as possible to increase the distance between her body and the train. In other subway systems, the safe place is actually located between the two sets of tracks because the power source to the trains is located along the edge of the platform. It is therefore important to know the location of the safe place for a particular subway system before traveling.

The traveler can use the sounds of people on the platform for orientation. Moving to the safe place enables the traveler to get out of the way of any approaching train and also ensures she will be rolling away from, not toward, the third rail. Because most platforms can be as high as 5 feet above the tracks, people who do fall generally need to call for assistance to get back onto the platform.

Some subway systems will schedule opportunities for orienting blind travelers to the track area on an inactive track or during times when the trains are not running. When orienting a traveler to the track or the safe space, it is again important not to use a metal cane because such canes can conduct electricity.

### Train evacuation

When an emergency occurs, it is almost always safer for passengers to remain in the train until help can arrive. Passengers should only leave a stalled train when remaining on the train would pose a threat to their safety (e.g., in case of fire). Subway systems

have established procedures for evacuating trains during an emergency. In the event of an evacuation, passengers are generally instructed to walk along the track bed to the nearest station. In doing so, one must pay careful attention to hazards on the track bed, such as the third rail, the high voltage paddle units that extend from the underside of the train, or the presence of any switching devices or other obstacles located along the track bed.

In the event of an evacuation, the traveler can ask someone nearby if she could take his or her arm (GUIDING technique). If the traveler uses a wheelchair, she will need to leave the wheelchair on the train and allow people to carry or otherwise physically assist her to safety.

## Taking a Trip

Initially, the teacher will ride with the traveler. Later, the teacher may board and ride the train separately from the traveler, pretending to be just another passenger. This gives the traveler a greater sense of independence and also facilitates easier access to other pedestrians and passengers when soliciting assistance.

Subways are often more crowded during the commute hour. It can, therefore, be helpful, when possible, to schedule initial lessons during a non-peak time, and to schedule later trips during busier times when the traveler needs to practice obtaining assistance from other passengers.

## Related Techniques

None

## **REFERENCES**

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